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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,245	12/05/2003	J. Ramon Vargas	87229AEK	1189

7590

06/06/2005

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EXAMINER

GARRETT, DAWN L

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/729,245

Applicant(s)

VARGAS ET AL.

Examiner

Dawn Garrett

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1-30-04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 28 and 29 are objected to because of the following informalities:

Claims 28 and 29 refer to the "OLED device of claim 1". Claim 1 uses the term "phosphorescent electroluminescent device" rather than OLED. It is suggested that claims 28 and 29 be amended for consistency with claim 1. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24 is indefinite because the claim refers to formula (1) of claim 1; however, there is not a formula recited in claim 1.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-19, 22, 25, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ise et al. (US 2002/0028329). Ise et al. discloses a light emitting element that may comprise a light emitting material and a host material (see abstract). The host material is represented by

Art Unit: 1774

formula (I), which is  $L^1 - (Q^1)_n^1$  (see par. 13). Q may be a an aromatic group or a hetero-ring (see par. 14). L may be the following (boron-containing link):



(see par. 40, page 3). Q may include various hetero-rings comprising a nitrogen atom that may bond with the boron “L” group (see par. 42 and 47-49). Ise et al. further discloses that the Q groups may be further substituted. Ise et al. discloses the light emitting material of the light emitting layer is a phosphorescent compound such as the iridium complexes shown on page 50 (also see par. 147). Ise et al. teaches the weight ratio of the light emitting material to the host material is from 0.1% to 20% by weight (see par. 154) per claims 16-18. Ise et al. discloses the emission of white light at par. 200 per claim 25. With regard to claim 19, blue light emission is disclosed (see Table 1 and par. 196, page 55). Various displays may incorporate the device with regard to claims 28 and 29 (see par. 178). Although Ise et al. fails to exemplify a device wherein the host material of the light emitting layer is comprised of a material according to formula (I) wherein L is the boron linking group and the Q groups are either aromatic or hetero-aromatic nitrogen-containing rings, it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed a device with a boron compound as required by the claims, because Ise et al. clearly teaches boron-containing host compounds within the claim requirements and further discloses phosphorescent compounds as dopants in the light emitting layer.

6. Claims 20, 21, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ise et al. (US 2002/0028329) in view of Tokito et al. (US 2003/0091862). Ise et al. is relied upon as set forth above. Ise et al. teaches incorporating a blue phosphorescent material in the

Art Unit: 1774

light emitting layer, but fails to teach specifically a red or green phosphorescent material may be used. Tokito et al. teaches in analogous art the use of green or red phosphorescent material as equally suitable for a light emitting device as a blue phosphorescent material (see par. 117). Ise et al. further fails to teach specifically that the phosphorescent material may be part of a polymer. Tokito et al. teaches polymeric phosphorescent compounds for a light emitting device (see Figure 1). It would have been obvious for one of ordinary skill in the art at the time of the invention to have made a device comprising red emitting, green emitting or polymeric phosphorescent compounds in place of the blue phosphorescent compound of the Ise et al. device, because Tokito et al. teaches red emitting, green emitting and polymeric phosphorescent that are equally suitable as a phosphorescent material in a light emitting layer. Ise et al. also fails to teach a color filter is used in the device, but does teach white light emission (see par. 200). Tokito et al. teaches in analogous art it is well known to incorporate a filter into a light emitting device in order to achieve a desired color (see par. 70). It would have been obvious to one of ordinary skill in the art to have further included a color filter in the Ise et al. device, because Tokito et al. teach a filter is a commonly known means of achieving desired light emission color.

7. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ise et al. (US 2002/0028329) in view of Shi et al. (US 5,683,823). Ise et al. is relied upon for the rejection of claim 1 as set forth previously. Ise et al. discloses the light emitting layer comprises at least a host material and a light emitting material and specifically teaches a phosphorescent material as the light emitting material. Ise et al. fails to teach specifically a fluorescent material may be further included in the light emitting layer. Shi et al. teaches, in analogous art, it is well known

Art Unit: 1774

to use a fluorescent dopant in a light emitting layer in order to achieve, in combination, white light emission or a desired color of emission (see abstract, col. 6, lines 48-52 and entire patent). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have further incorporated fluorescent agents of desired emission colors into the Ise et al. device to achieve a desired light emission, because it is well known in the art that desired emission color can be achieved by doping the light emitting layer with fluorescent dopants.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571)272-1523. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached at (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 30, 2005

  
DAWN GARRETT  
PRIMARY EXAMINER